#### Sheet 1 of 34

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GEWLDDEVLIKMASQPFGRGAMRECFRTKKLSNFLHAQ	TII RDVYFEDVRLQMEAKLWGEEYNRHKPPRQVDIMQMCIIELKDRPGKPLF-HLEHYIEGKYIKYNSNSGFVRDDNIRRVLFDDVRLQMEAKLWAEEYNRYNPPKKIDIVQMCVIEMIDVKGSPLY-HLEHFIEGKYIKYNSNSGFVRDAA- QQASRELYFEDVKMQMVCRDWGNKFNQKKPPKKIEFLMSWVELIDRSPSSNGQPILCSIEPLLVGEFKKNNSNYGAVLTNPTPRPSYFEDVKMQMIAKKWADKYNSFKPPKKIEFLQSCVLEFVDRTSSDLICGAEPYVEGQYRKYNNNSGFVSNDETTRDSYFTDVLMQTFCAKWAEKFNEAKPPKPITFLPSYVYELIDHPPPYPV-CGGEPFIEGDYKKHNNNSGYVSSDATTRDSYFTDVLMQTFCAKWAEKFNEAKPPKPITFLPSYVYELIDHPPPYPV-CGGEPFIEGDYKKHNNNSGYVSSDATTRDSYFTDVLMQTFCAKWAEKFNEAKPPKPITFLPSYVYELIDHPPPYPV-CGGEPFIEGDYKKHNNNSGYVSSDATRASYFTDVLMQTFCAKWAEKFNEAKPPKPITFLPSYVYELIDHPPPYPV-CGGEPFIEGDYKKHNNNSGYVSSDA-	RLTPQAFSHFTFERSGHQLIVVDIQGVGDLYTDPQIHTETGTDFGDGNLGVRGMALFFYSHACNRICESMGLAPFDLSPRERD RLTPQAFSHFTFERSGHQMMVVDIQGVGDLYTDPQIHTVVGTUYGUGNLGTRGMALFFHSHRCNDICETMDLSNFELSPPELE RSTPQAFSHFTYELSNKQMIVVDIQGVGDLYTDPQIHTPDGKGFGLGNLGKAGINKFITTHKCNAVCALLDL-DVKLG RNTPQSFSHFTYEHSNHQLLIDIQGVGDHYTDPQIHTYDGVGFG IGNLGQKGFEKFLDTHKCNAVCALLDL-DVKLG RNTPQSFSHFSYELSNHELLIVDIQGVUDFYTDPQIHTKSGEGFGEGNLGETGFHKFLQTHKCNPVCDFLKLKPIN RNTPQSFSHFSYELSNHELLIVDIQGVNDFYTDPQIHTKSGEGFGEGNLGE**GO***FO*****************************	AVNONTKLLQSAKTILRGTEEKCGS ATEVAMEVAAKQKKSCIVPPTVFEARRGVLSGNNKQLQQGTMVMPDI
122 G 108 K 570 N 130 P	178 162 653 177 42	252 235 734 254 118	335 318 811 330 194
human EF2K C. e. EF2K MHCK A MHCK B FC-AN09 consensus	human EF2K C. e. EF2K MHCK A MHCK B FC-AN09	human EF2K C. e. EF2K MHCK A MHCK B FC-AN09	human EF2K C. e. EF2K MHCK A MHCK B FC-AN09

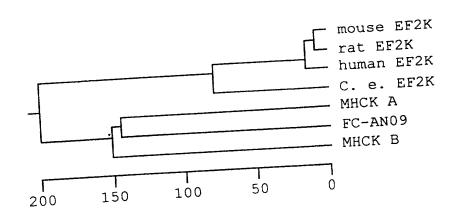


Figure 1B

	5 C C C C C C C C C C C C C C C C C C C	143 129 142 591	166 150 165 641	11.00	23.99
	PSNNKS.RY.SSN DYADEVFIEQNDVVIEKPRMDPLHVRKLMETWRKAARRART 7 DHMSNQNVSSKVQSYYSNLTKTECGS-TGSPASSFHFKBAWKHAIEKAK- 9	NYI <mark>dpw</mark> derniheypvorakryrysatirkowtedivdvrihpdsfargam nyi <mark>dpwder</mark> nihediatehatrhrynavtgewlkdevlikmasopfgrgam mirlsmkirderipegal	RECYRLKKCSSHGTSQDWSSN RECFRYKKLSNFLHAQQWKGASN RECFRYKKLSNFLHAQQWKGASN	-	CVIEMIDVKGSP-LYHLEHFIEGKYIKYNSNSGEV-S-NAARLTPO CITELKDRPGQP-LEHLEHYIEGKYIKYNSNSGEVRDDNI-RLTPO WVVELIDRSPSSNGQPILCSIEPILVGEEKKNNSNYGAVIT-NRSTPO Figure 2A
HHH	45 39 45	94 80 93	144 130 143 592	167 151 166 642	213 197 212 692
11-1-098CIP human eEF-2K C. elegans eEF-2K mouse eEF-2K	human eEF-2K C. elegans eEF-2K	6EF-2K 6EF-2K 6EF-2K			human eEF-2K C. elegans eEF-2K mouse eEF-2K

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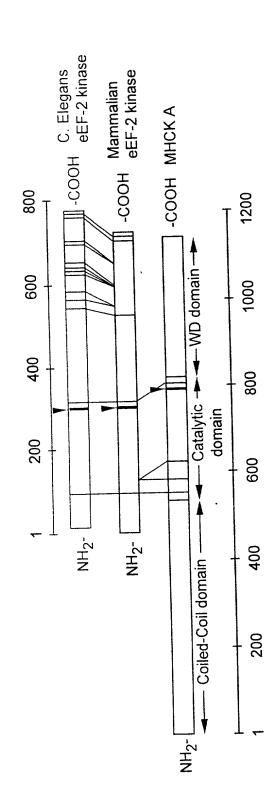
AFSHFTFERSGHOMMVVDIQGVGDLYTDPQIHTVVGTDYGDGNLGTRGMA 289 AFSHFTFERSGHOLIVVDIQGVGDLYTDPQIHTEKGTDFGDGNLGVRGMA 305 AFSHFTYELSNKOMIVVDIQGVDDLYTDPQIHTPDGKGFGLGNLGKAGIN 788	SHRCNDICETMDLSNEELSPETERTEVAMEVAAKOKKSCIVPPTV 339 SHACNRICOSMGLTPEDLSPREQDAVNOSTRLLOSAKTILRGTE 353 THKCNAVCALLDL	FEARRN <b>RI</b> SSECVHVEHGISMDQ <b>ur</b> krktl <b>nos</b> stdlsakshnedcv 386 EKCGSP <b>RI</b> RTLSSSRPPLL- <b>ur</b> lsensgde <b>nms</b> dvtfdslpsspssa 399	CPECIPWVEQLCEPCSEDEEDEEEDYPRSEKSGNSQKSRRSRMSISTRSS 436 TPHSQKLDH-LHWPVFGDLDNMGPRDHDRMDNHRDSENSGDSGYPSEKRS 448	-EKS83KY	KVLRKOSVPANILSLOLOOMAANLENDEDVPOVTGHQFSVLGCIHIDLSR 536 HLPRPSAVALEVORLNALDLGRKIGKSVLGKVHLAMVR 531
AFSHETFE AFSHETFE AFSHET <u>V</u>	LEEYSHA LEEYSHA KEITTHK	V FEARRN <mark>RI</mark> SS EKCGSP <mark>RI</mark> RT	CPECIPV TPHSQKL	-E GDESASR -DLDDPE	KVLRKOS HLPRPS
257 240 256 739	307 290 306 789	355 340 354	401 387 400	450 437 449	495 487 494
human eEF-2K C.elegans eEF-2K mouse eEF-2K	human eEF-2K C.elegans eEF-2K mouse eEF-2K	human eEF-2K C.elegans eEF-2K mouse eEF-2K	human eEF-2K C.elegans eEF-2K mouse eEF-2K	human eEF-2K C.elegans eEF-2K mouse eEF-2K	human eEF-2K C.elegans eEF-2K mouse eEF-2K

#### Figure 2B

## 601-1-098CIP

NHELGREVEVDSEHKEMLEGSENDARVPIKYDROSATEHLDIARKCGILE 586	AVITSAHIVLGIPHELLKEVTVDDLFPNGFGEQBNGIRADKGQKPCDLEE 636		GEQEEBELDSDCGKTTFSSFAPLTRHEILAKMABWYKEGGYGLNQDFERA 736	YGLENERARBAMNGKLANKYYEKABMCGE 768
YHEGGRECEKDEEWDRESATEHLEHADLGELE 564	AIVGLGLMYSQIPHHILADVSIKETEBNKTK 595		bttdcdeg-geydgiqdepqyallarefaralitageggggggggggggggggggggggggggggggggggg	GDLYTQAABAAMBAMKGRLANQYYEKABEAWAQMEE 724
533	566	597	646	690
537	587	637	687	737
532	565	596	645	689
human eEF-2K	human eEF-2K	human eEF-2K	human eEF-2K	human eEF-2K
C.elegans eEF-2K	C.elegans eEF-2K	C.elegans eEF-2K	C.elegans eEF-2K	C.elegans eEF-2K
mouse eEF-2K	mouse eEF-2K	mouse eEF-2K	mouse eEF-2K	mouse eEF-2K

Figure 2C



ュー・コンニク

H. EF-2K 124 WLDDEVLLKMASQPFGRGAMRECFRTKKLSNFLHAQ	H. EF-2K  H. EF-	252 235 235 734 254 165 335 8153 1153	
MHK, MHK, MHK, MHK, MHK, MHK, MHK, MHK,	ī ŠĀĀĀĀŠŌ Č	105551500	_

#### Figure 4

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1 cgggcgcggg cgcgtccctc tggccagtca cccggcggag ctggtcgcac aattatgaaa
  61 gactcgactt ctgctgctag cgctggagct gagttagttc tgagaaggtt tcccggggct
 121 gteettgtte ggtggeeegt geeaeegeet eeggagaege ttteegatag gtggetgeag
 181 geogeggagg tggaggagga geogetgeee tteeggagte egeeeegtga ggagaatgte
 241 ccagaaatcc tggatagaga gcactttgac caagagggag tgtgtatata ttataccaag
 301 ctccaaagac cctcacagat gtcttccagg atgtcagatt tgtcagcaac ttgtcagatg
 361 tttctgtggt cgtttggtca agcaacatgc atgctttact gcaagtcttg ccatgaaata
 421 ctcagatgtg agattgggtg aacactttaa ccaggcaata gaagaatggt ctgtggaaaa
 481 gcacacggag cagagcccaa cagatgctta tggagtcatc aattttcaag ggggttctca
 541 ttcctacaga gctaagtatg tgagactatc atatgatacc aaacctgaaa tcattctgca
 601 acttctgctt aaagaatggc aaatggagtt acccaaactt gttatttctg tacatggagg
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 721 agctgcagtt acaaccggag cttggatttt aactggagga gtcaatacag gtgtggcaaa
 781 acatgttggt gatgccctca aagaacatgc ttccagatca tctcgaaaaa tttgcactat
 841 tggaatagct ccatggggag tgatagaaaa cagaaatgat cttgttggga gagatgtggt
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 961 ctcccatttc atcttggtgg atgatggcac tgttggaaag tatggggcag aagtcagact
1021 gagaagagaa cttgaaaaaa ccattaatca gcaaagaatt catgctagaa ttgggcaagg
1081 agttcctgtg gtggctttga tatttgaagg cgggccaaat gtcatcctta cagtactgga
1141 gtaccttcag gaaagccccc cagttccagt tgttgtgtgt gaagggacag gcagagctgc
1201 agatttacta gcctatatcc acaaacagac agaggaagga ggaaatcttc ctgatgcagc
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1321 tcatttattt caaacaatga tggagtgtat gaaaaaaaaa gagcttatca ctgtttttca
1381 cattggatca gaggatcatc aagatataga tgtggccata ctcactgcac tgctgaaagg
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1681 aggtccaacc aatccaatgt tgttccatct cattcgggat gtcaagcagg gtaatctccc
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1981 aacagcccaa ccctacagac caaagatgga tgcatctatg gaagaaggaa agaagaaaag
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```

Figure 5A

```
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3241 cattgtagtg ataatggctc ttgtattgct tagttttggt gttcccagaa aagcaatact
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```

Figure 5B

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6001	aagtgctagc	tggcagagag	tcagtgctct	cggctggtga	agggcgggaa	ccttgctgct	
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6361	aacccagggc	ctcatgaaga	ccattttcta	agagacattt	tatttaagaa	tcaactatag	
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6961	gagataagct	gttaaatagt	gtttaatgtt	gatgtggaga	gaaaggtgta	ttacttaaaa	
7021	atactatacc	atatacgttt	tgtatatcat	taaatcttta	aaagaaatta	aatttattct	
7081	totttacaaa	• •					

MSQKSWIESTLTKRECVYIIPSSKDPHRCLPGCQICQQLVRCFCGRLVKQHACFTASLAM KYSDVRLGEHFNQAIEEWSVEKHTEQSPTDAYGVINFQGGSHSYRAKYVRLSYDTKPEII  $\verb"LQLLLKEWQMELPKLVISVHGGMQKFELHPRIKQLLGKGLIKAAVTTGAWILTGGVNTGV"$ AKHVGDALKEHASRSSRKICTIGIAPWGVIENRNDLVGRDVVAPYQTLLNPLSKLNVLNN LHSHFILVDDGTVGKYGAEVRLRRELEKTINQQRIHARIGQGVPVVALIFEGGPNVILTV LEYLQESPPVPVVVCEGTGRAADLLAYIHKQTEEGGNLPDAAEPDIISTIKKTFNFGQSE AVHLFQTMMECMKKKELITVFHIGSEDHQDIDVAILTALLKGTNASAFDQLILTLAWDRV DIAKNHVFVYGQQWLVGSLEQAMLDALVMDRVSFVKLLIENGVSMHKFLTIPRLEELYNT KQGPTNPMLFHLIRDVKQGNLPPGYKITLIDIGLVIEYLMGGTYRCTYTRKRFRLIYNSL GGNNRRSGRNTSSSTPQLRKSHETFGNRADKKEKMRHNHFIKTAQPYRPKMDASMEEGKK KRTKDEIVDIDDPETKRFPYPLNELLIWACLMKRQVMARFLWQHGEESMAKALVACKIYR SMAYEAKQSDLVDDTSEELKQYSNDFGQLAVELLEQSFRQDETMAMKLLTYELKNWSNST CLKLAVSSRLRPFVAHTCTQMLLSDMWMGRLNMRKNSWYKVILSILVPPAILMLEYKTKA EMSHIPQSQDAHQMTMEDSENNFHNITEEIPMEVFKEVKILDSSDGKNEMEIHIKSKKLP ITRKFYAFYHAPIVKFWFNTLAYLGFLMLYTFVVLVKMEQLPSVQEWIVIAYIFTYAIEK VREVFMSEAGKISQKIKVWFSDYFNVSDTIAIISFFVGFGLRFGAKWNYINAYDNHVFVA GRLIYCLNIIFWYVRLLDFLAVNOOAGPYVMMIGKMVANMFYIVVIMALVLLSFGVPRKA ILYPHEEPSWSLAKDIVFHPYWMIFGEVYAYEIDVCANDSTLPTICGPGTWLTPFLQAVY LFVQYIIMVNLLIAFFNNVYLQVKAISNIVWKYQRYHFIMAYHEKPVLPPPLIILSHIVS LFCCVCKRRKKDKTSDGPKLFLTEEDQKKLHDFEEQCVEMYFDEKDDKFNSGSEERIRVT FERVEOMSIQIKEVGDRVNYIKRSLQSLDSQIGHLQDLSALTVDTLKTLTAQKASEASKV HNEITRELSISKHLAQNLIDDVPVRPLWKKPSAVNTLSSSLPQGDRESNNPFLCNIFMKD

Figure 6A

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GHRDSMDLQRFKETSNKIRELLSNDTPENTLKHVGAAGYSECCKTSTSLHSVQAESCSRR
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..
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LML

Figure 6B

cctgggcgttccttgtccggcggcctctgctgccgcctccggagacgcttcccgatagatggctacaggccgcggaggaggaggaggtggagttgctgcccttccggagtc cgccccgtgaggagaatgtcccagaaatcctggatagaaagcactttgaccaagagggaatgtgtatatattataccaagttccaaggaccttcacagatgccttccaggatgt canatttgtcagcaactcgtcaggtgtttttgtggtcgcttggtcaagcaacatgcttgttttactgcaagtcttgccatgaaatactcagatgtgaaattgggtgaccattttaatcag tcatatgacaccaaacctgaagtcattctgcaacttctgcttaaagaatggcaaatggagttacccaaacttgttatctctgtacatgggggcatgcagaaatttgagcttcaccca aaagaacatgcttccagatcatctcgaaagatttgcactatcggaatagctccatggggagtgattgaaaacagaaatgatcttgttggggagagatgtggttgctccttatcaaac cttattgaaccccctgagcaaattgaatgttttgaataatctgcattcccatttcatattggtggatgatggcactgttggaaagtatggggcggaagtcagactgagaagaagaact tgaaaaaactattaatcagcaaagaattcatgctaggattggccagggtgtccctgtggtggcacttatatttgagggtgggccaaatgttatcctcacagttcttgaataccttca at attggg t cagat gaac at caagat at agat g tag caat acttact g cact g ctaa a aggt act a at gc at t t gac cag ct t at ect t a cattgg cat g g g at a gag t t g a ctaat g g cat g g g 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gaccttetgtatggaaaaagcatggtgttgtaaatacacttageteeteteteeteaaggtgatettgaaagtaataateetttteattgtaatattttaatgaaagatgacaaagate ctgcgacagagactacatggggtagaactcttaaaaatatttaataaaaatcaaaaattaggcagttcatctactagcataccacatctgtcatccccaccacatttttgttagtacaccatct cag c caagtt g caa aag c cactt g gaa act g gaa acca aag aa act gt t t g ct ctaa ag cta cag aag gag at aat ac ag aat t t g gag catt t g t ag a cac act g cac a gaa gag at aat ac ag aat t t g gag catt g t ag a cac act g cac agacacagagatagcatggatttacagaggtttaaagaaacatcaaacaagataaaaatactatccaataacaatacttetgaaaacactttgaaacgagtgagttctcttgctgga tegttacaagatagaccatcaaacagagaaatgccatctgaagaaggaacattaaatggtctcacttctccatttaagccagctatggatacaaattactattattcagctgtggaa atgatatectea a ateaggge a tettta tattatea a atetttettee agaggt ggtta atae atggtea ag tattae aa agaagatae agttet ge atetet gagagaa atteaggge at the attatatea at the tattatea at the 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Figure 7A

MSOKSWIESTLTKRECVYIIPSSKDPHRCLPGCQICQQLVRCFCGRLVKQHACFTA SLAMKYSDVKLGDHFNQAIEEWSVEKHTEQSPTDAYGVINFQGGSHSYRAKYVRL SYDTKPEVILOLLLKEWOMELPKLVISVHGGMQKFELHPRIKQLLGKGLIKAAVT TGAWILTGGVNTGVAKHVGDALKEHASRSSRKICTIGIAPWGVIENRNDLVGRDVV APYOTLLNPLSKLNVLNNLHSHFILVDDGTVGKYGAEVRLRRELEKTINQQRIHAR **IGOGVPVVALIFEGGPNVILTVLEYLOESPPVPVVVCEGTGRAADLLAYIHKQTEEG** GNLPDAAEPDIISTIKKTFNFGQNEALHLFQTLMECMKRKELITVFHIGSDEHQDID VAILTALLKGTNASAFDQLILTLAWDRVDIAKNHVFVYGQQWLVGSLEQAMLDAL VMDRVAFVKLLIENGVSMHKFLTIPRLEELYNTKQGPTNPMLFHLVRDVKQGNLP **PGYKITLIDIGLVIEYLMGGTYRCTYTRKRFRLIYNSLGGNNRRSGRNTSSSTPQLR** KSHESFGNRADKKEKMRHNHFIKTAQPYRPKIDTVMEEGKKKRTKDEIVDIDDPE TKRFPYPLNELLIWACLMKROVMARFLWOHGEESMAKALVACKIYRSMAYEAKQ SDLVDDTSEELKQYSNDFGQLAVELLEQSFRQDETMAMKLLTYELKNWSNSTCLK LAVAAKHRDFIAHTCSOMLLTDMWMGRLRMRKNPGLKVILSILVPPAILLLEYKT KAEMSHIPOSODAHOMTMDDSENNFQNITEEIPMEVFKEVRILDSNEGKNEMEIQM KSKKLPITRKFYAFYHAPIVKFWFNTLAYLGFLMLYTFVVLVQMEQLPSVQEWIVI AYIFTYAIEKVREIFMSEAGKVNQKIKVWFSDYFNISDTIAIISFFIGFGLRFGAKWNF ANAYDNHVFVAGRLIYCLNIIFWYVRLLDFLAVNQQAGPYVMMIGKMVANMFYIV VIMALVLLSFGVPRKAILYPHEAPSWTLAKDIVFHPYWMIFGEVYAYEIDVCANDS VIPQICGPGTWLTPFLQAVYLFVQYIIMVNLLIAFFNNVYLQVKAISNIVWKYQRYH FIMAYHEKPVLPPPLIILSHIVSLFCCICKRRKKDKTSDGPKLFLTEEDQKKLHDFEE **QCVEMYFNEKDDKFHSGSEERIRVTFERVEQMCIQIKEVGDRVNYIKRSLQSLDSQI** GHLODLSALTVDTLKTLTAOKASEASKVHNEITRELSISKHLAQNLIDDGPVRPSV WKKHGVVNTLSSSLPQGDLESNNPFHCNILMKDDKDPQCNIFGQDLPAVPQRKEF NFPEAGSSSGALFPSAVSPPELRORLHGVELLKIFNKNQKLGSSSTSIPHLSSPPTKFF VSTPSOPSCKSHLETGTKDOETVCSKATEGDNTEFGAFVGHRDSMDLQRFKETSN KIKILSNNNTSENTLKRVSSLAGFTDCHRTSIPVHSKQEKISRRPSTEDTHEVDSKAA LIPVWLODRPSNREMPSEEGTLNGLTSPFKPAMDTNYYYSAVERNNLMRLSQSIPF TPVPPRGEPVTVYRLEESSPNILNNSMSSWSQLGLCAKIEFLSKEEMGGGLRRAVK VQCTWSEHDILKSGHLYIIKSFLPEVVNTWSSIYKEDTVLHLCLREIQQQRAAQKLT **FAFNOMKPKSIPYSPRFLEVFLLYCHSAGQWFAVEECMTGEF** RKYNNNGDEIIPTNTLEEIMLAFSHWTYEYTRGELLVLDLQGVGENLTDPSVIKA **EEKRSCDMVFGPANLGEDAIKNFRAKHHCNSCCRKLKLPDLKRNDYTPDKIIFPQD EPSDLNLOPGNSTKESESTNSVRLML** 

TGGTGCTGAGAAGAGTCTGTTCACAAAATTCTTCCCACTGTCATTCCTAACCTGGGATTTCTAGACACATCCTGCTGATGTAAACAGAAATCACGAATTTGGTTTAATTA 16GATCAAGTTGTTCCACTGGTGTTAATACGCTATTGTTGCCGGAGGTGGGTTCTGTGAAGCCATTTCCCATCATTCAACAGCCAGTTACAATTTTCTGTTTAATTA CCTAACGTCCCTGGGTAACCTAATGGCCACTGGCTAGCACACACTCTCGCCAGGGAAAATCTGAGGCCACACAGGGAGAATATACAGCCTGCAGAGAGTGCGTGGCA ATCCTTACCCCAGCCGACTGTGCGCCAAGATGCTTCTAAACCCATCACCTGCTGTTTCACTCAAATGATTTCAGAACAGGATTTGCGACCAGGTTTATGGGGAGATTGAA ACCTGGCCATGCCTGTGTGCTTAAGGTGCCATTGCCTATGGGACCAGAATAATGATGATGAGCTCATCCAAAGGAACTACAAACTGCCCAGGAATGCTATGTT AGAAATGTTGCACCTTCCAGCACTGGGTGTACCAGAAACAAGTGGCTGCTCCTGGTGACGGACATGCAAGGTGTAGGAATGAAGCTAACTGACGTTGGCATAGCAACGC TGGCTAAAGGGTACAAGGGATTTAAAAGGCAACTGTTCCATGACCTTCATTGATCAGTTTAAAGCACTACACCAGTGTAACAAGTATTGCAAAATGCTGGGACTGAAATCCCT GGGACAACTCCACTGTTTCCTTTGCCATCGTGCAAGCCAGTCCGAAGGACCAGGGACTCTATTACTGCTGCATCAAGAACAGCTACGGAAAAGTGACTGCTGAATTTAACCT GAACACTCTGGAAATGTAAAATTAAGCTGCCAATTTGCAGAAATTCATGAAGATTCTACTATCTGCTGGACAAAAGATTCAAAGTCCATAGCCCAAGTGCAGAAGTGCAG CACAGCTGAAGTTCTCAAACAGCTGTCAAGTCGCCAGGATACTAAAGGATGTGAAGAGATTGAATTCAGCCAACTCATCTTCAAAGAAGACTTCCTCCATGACAGCTACTTT TCCTGANGGAAATGTCACAGACTTTTTGATAAGCCACAAAATGGAGGAACCTAAAATAGAGGTGCTTCAAATTGGGGAAACCAAACCCCAAGCTCATCTAGCTCCTCAGCG GGGGCCGCCTGCGTCGGTCGCCACGGGGGGCTGCTTTTGGAGGGGTTCACCGCAAAGCCTTCCGCAGCAGTGATGCACGGCCTCATGCCTGTCTTCAA TTCACCTCTTTCTAGTTGTCTTCCAATAATGACTCACTCTTCTTGGGGTTGACACGCACAACTCCACAGGCCAAATTCATGACGTCCCTGAAAATGACATAGTTGAGCCCA AAGACCTTGGCATTTATTTCAGGAGAACGTGAGTTAGAGAAAGCCCCTAAGTTACTGCAGGATCCATGTCAAAAGGGCACCCTGGGCTGTGCGAAAAAGTCCAGGGAGAGA CAGGCCCCAGAGAAGGAGGTCAATCAAATGACGGAAACATGGGCCACGAAGCGGAAATCCAGTCGGCCATTTTGCAAGTTCCATGTCTCCAGGGAACCATTCTGAGTGAA FGALAGAATTCCAAGTGTAGCATAGGCCAAATACAAGAAGCAGTGATGGGAGGTTAGGGGAGGCTGAGCAAAGCAAAAGGACAAAGCAGAATTGATTTCCCCCAC GAAAGCGTCAGTATCCTGTTTCACAGAAAAGGGGAACTATTGAGAATGAGCGTGGGAAACCTTTGCCCTCTTCTCCTGATCTTACCAGGTTCCCTTGTACTTCATC AAAGTITCTGACCTGCCCTAAAATCCTAGAGCCTCTGTAGATCCCATTGATGAGATAAGTGTGATAGAGTACACCAGGGCTGGAAAACCAGAGCCTCTGAAACCACACCA AATAGAATCAGCAGAAGCCAAGAAGGCAGGAGGAGGCAGAAATTCAACCTGAGGAGGCAAAAACTGCCATTTGGCAAGTCCTGCAACCCAGCGAAGGCGG AGTCAGGCTCTGAGCAACGTTCCATCTCTCTCTGTTTGGAAGAGTCTAAAGAATATAGACCTGGAAATTGGGAGGCAACAACAGCTGAAGATTATAAACTCTAG AGGCTTCCGCTTCTGAAATCTGGCCACCACGACAACTGACAAATTCTGAGAGCATCAGACGGTGGTCTCATAATTCCTGACAAGGTCTGGGCTGTACCTGATAGTCT AAAGGCAGATGCTGTTGTGCCTGAATTGGCCCCTCTGAAATAGCAGCATTGGCTCACAGTCCAGAGGATGCTGAGTCAGCCCTTGCTGATAGCAGAAAAAGGCATAAAAGG CACAGATICACTGTCAGCGGCTTCTGAAACTGGGGAAGGAAAATGTTAACAATGTGAGTCAAGACAGGAGGAAAAAACAACTCAAGATGGATCACTGCTTTTAA TAACTATTCGCCTCAAGAAATTTGCTCTGTAGATACGGAACTGGCAGAAGGTCAAAACAAAGTATCTGATTTATGTTCTTCTAATGACAAGACATGGAAGTCTTTTTTTCAGA TTATAGETICAATTGEGAGTITTCCTTGGGAGAAGCCAACAACATTAACTGCTAATAATGAGTGCTTTCAAGCGACCAGAGAGTGTTACCATTGCCACCGAAGTCCACCCA TGGATCATATTTTAAGTGGTGCTACCATCAAAAAAGAGCTACTTTGCAGGGCACCCAGTGTGCCAGGAGTCCCACATGTCCTGCAGGCTCCCAGAGGGAAGG GTGTGTTCTCAAGGCATCTCCCCAAGGATGCTCGTGCTGGACTTCAGGGAGCCTGTGGTGTTCTGTTGCTTCCCCTGAACCCCACAGATACTGCCCTCACCCTGGAAAATGT GAGTCCCCAITCACTGGGACCACAACTTTCCTTCTCAAACTTAGGAGGGGTCCACAAGGAAAATGCATCATTAGCTCAACACTCGGAGGTCAAACCCTGTACCTGTGGTC GTGTGATGAGCCAAGGGACAGAGAGTGTGTGTGTTTTGAGGCTAGTGACCAAGGAACATGTTTTGATACCATAGATTCTCTTGTTGGGACACCAGTTGA TGAAGGTGCCACAGGAGAAAATCTAGCCAAGGTGGAGAAATCCACCTACCCACTGGCCTCCACAGTACATGCTGGCCAGGAGCAGCCAAGCCCCAGCAACTCAGGAGGGC CACAGCAGGAAGAAAAAAGAAGATGGCAACATACCTGACAATTTCAGGGAAGACCTAAAATATGAGCAGGGAGGCATCTCAGAAGCCAATGATGAGACTATGTCCCCAG GAATCTGCTGAGCCCCCACTAACCCAGAGTGATAAAAGAGAGTTCTCACACCACAGCAGCGGCGACTGGTCGGAGTTCCCATGCTGATGTGCTATTTCA ACCCAGGCAGAGCAAGAAGCCTTCAAACTTCAACAGACTCAGTCTCCAAAGAAGGCAACACAAATTGCAAGGGAGAAGGCATGCAAGTTAATACTCTATTTGAA 

Figure 8A

PLEGFGEVPEIIPIFLIHRPENNIPYATVEEELIGEFVKYSIRDGKEINFLRRESEAGQKCCTFQHWVYQKTSG AKTLAFISGERELEKAPKLLQDPCQKGTLGCAKKSREREKSLEARAGKSPGTLTAVTGSEEVKRKPEAPGS AFRSTVMHGLMPVFKPGHACVLKVHNAIAYGTRNNDELIQRNYKLAAQECYVQNTARYYAKIYAAEAQ CLLVTDMQGVGMKLTDVGIATLAKGYKGFKGNCSMTFIDQFKALHQCNKYCKMLGLKSLQNNNQKQK RKRQYVFPVSQKRGTIENERGKPLPSSPDLTRFPCTSSPEGNVTDFLISHKMEEPKIEVLQIGETKPPSSSSSS SQQGSLSAPDFQQSLPTTSAAQEERNLVPTAPSPASSREGAGQRSGWGTRVSVVAETAGEEDSQALSNVPS NSYGKVTAEFNLTAEVLKQLSSRQDTKGCEEIEFSQLIFKEDFLHDSYFGGRLRGQIATEELHFGEGVHRK LSDILLEESKEYRPGNWEAGNKLKIITLEASASEIWPPRQLTNSESKASDGGLIIPDKVWAVPDSLKADAVV PELAPSEIAALAHSPEDAESALADSRESHKGEEPTISVHWRSLSSRGFSQPRLLESSVDPVDEKELSVTDSLS AASETGGKENVNNVSQDQEEKQLKMDHTAFFKKFLTCPKILESSVDPIDEISVIEYTRAGKPEPSETTPQGA KIQAEMFPEHSGNVKLSCQFAEIHEDSTICWTKDSKSIAQVQRSAGDNSTVSFAIVQASPKDQGLYYCCIK ERIPSGCSIGQIQESSDGSLGEAEQSKKDKAELISPTSPLSSCLPIMTHSSLGVDTHNSTGQIHDVPENDIVEP GHLAEGVKKKILSRVAALRLKLEEKENIRKNSAFLKKMPKLETSLSHTEEKQDPKKPSCKREGRAPVLLK REGGQSNDGNMGHEAEIQSAILQVPCLQGTILSENRISRSQEGSMKQEAEQIQPEEAKTAIWQVLQPSEGG KPCTCGPQQEEKQDRDGNIPDNFREDLKYEQSISEANDETMSPGVFSRHLPKDARADFREPVAVSVASPEP TVHAGQEQPSPSNSGGLDETQLLSSENNPLVQFKEGGDKSPSPSAADTTATPASYSSIVSFPWEKPTTLTAN LCRAPSVPGVPHHVLQLPEGEGFCSNSPLQVDNLSGDKSQTVDRADFRSYEENFQERGSETKQGVQQQSL NECFQATRETVTIATEVHPAKYLAVSIPEDKHAGGTEERFPRASHEKVSQFPSQVQVDHILSGATIKSTKEL TLFETSQVPDWSDPPQVQVQETVRETISCSQMPAFSEPAGEESPFTGTTTISFSNLGGVHKENASLAQHSEV TDTALTLENVCDEPRDREAVCAMECFEASDQGTCFDTIDSLVGTPVDNYSPQEICSVDTELAEGQNKVSD LCSSNDKTLEVFFQTQVSETSVSTCKSSKDGNSVMSPLFISTFTLNISHTASEGATGENLAKVEKSTYPLAS ESAEPPL TQSDKRETSHTTAAATGRSSHADARECAISTQAEQEAKTLQTSTDSVSKEGNTNCKGEGMQVN QPSIGKSKVQTNSMTVKKAGPETPGEKKT

Figure 8B

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atgtcccaga aatcctggat taaaggagta tttgacaaga gagaatgtag cacaatcata eccageteaa aaaateetea eagatgtaet eeagtatgee aagtetgeea gaatttaate aggtgttact gtggccgact gattggagac catgctggga tagattattc ctggaccatc teagetgeea agggtaaaga aagtgaacaa tggtetgttg aaaagcacac aacgaaaagc ccaacagata cttttggcac gattaatttc caagatggag agcacaccca tcatgccaag tatattagaa ettettatga tacaaaactg gateatetgt tacatttaat gttgaaagag tggaaaatgg aactgeecaa gettgtgate teagteeatg ggggeateea gaactttaet atgeceteta aatttaaaga gatttteage caaggtttgg ttaaagetge agagacaaca ggagegtgga taataactga aggeateaat acagtgteea ageatgttgg ggatgeettg aaateeeatt eeteteatte ettgagaaaa atetggaeag ttggaateee teettggggt gtcattgaga accagagaga cettattgga aaagatgtgg tgtgcctgta ccagactctg gataaccccc teageaaget cacaacacte aacagcatge actegeactt cateetgtet gatgatggga ccgtgggcaa gtatggaaat gaaatgaagc tcagaaggaa cctggagaag tacctetete tgeagaaaat acaetgeege teaagacaag gegtgeeggt egtggggetg gtggtggaag geggteecaa egteateetg teagtgtggg agaetgteaa ggacaaggae ccagtggtgg tgtgtgaggg cacaggtagg geggetgacc tcctggeett cacacacaa caectggeag atgaagggat getgegacet eaggtgaaag aggagateat etgeatgatt cagaacaett teaaetttag tettaaacag teeaageace tttteeaaat tetaatggag tgtatggttc acagggattg tattaccata tttgatgctg actctgaaga gcagcaagac etggaettag caateetaac agetttgetg aagggeacaa atttateage gteagageaa ttaaatetgg eaatggettg ggacagggtg gacattgeea agaaacatat cetaatttat gaacaacact ggaagcctga tgccctggaa caagcaatgt cagatgcttt agtgatggat egggtggatt ttgtgaaget ettaatagaa tatggagtga acetecateg etttettace atecetegae tggaagaget etacaataca aaacaaggae etactaatae actettgeat catetegtee aagatgtgaa acageatace ettettteag getaeegaat aacettgatt gacattggat tagtagtaga atacctcatt ggtagagcat atcgcagcaa ctacactaga aaacatttea gageeeteta caacaacete tacagaaaat acaageacea gagacactee teaggaaata gaaatgagte tgeagaaagt acgetgeact eeeagtteat tagaactgea cagecataca aatteaagga aaagtetata gteetteata aateaaggaa gaagteaaaa gaacaaaatg tateagatga eeetgagtet aetggettte tttaceetta caatgacetg ctggtttggg ctgtgctgat gaaaaggcag aagatggcta tgttcttctg gcagcatgga gaggaggeea eggttaaage egtgattgeg tgtateetet acegggeaat ggeceatgaa getaaggaga gteacatggt ggatgatgee teagaagagt tgaagaatta eteaaaacag tttggccage tggctctgga cttgttggag aaggcattca agcagaatga gcgcatggcc atgacgetgt tgacgtatga acteaggaae tggageaatt egacetgeet taaactggee gtgtcgggag gattacgace etttgtttca catacttgta cccagatget actgacagae atgtggatgg ggaggetgaa aatgaggaaa aactettggt taaagattat tataageatt attttaccae ceaceatttt gaeaetggaa tttaaaagea aagetgagat gteaeatgtt ecceagtece aggactteea atttatgtgg tattacagtg accagaacge cagcagttee aaagaaagtg ettetgtgaa agagtatgat ttggaaaggg gecatgatga gaaaetggat gaaaatcage attttggttt ggaaagtggg caccaacace tteegtggae caggaaagte tatgagttet acagtgetee aattgteaag ttttggtttt atacgatgge gtatttggea tteeteatge tgtteaetta eacegtgttg gtggagatge ageceeagee eagegtgeag gagtggettg ttagcattta catetteace aatgetattg aggtggteag ggaggtgagt attteagaae etgggaagtt tacceaaaag gtgaaggtat ggattagtga gtaetggaae ttaacagaaa etgtggecat tggcetgttt teagetgget tegteetteg atggggtgae ceteetttte acacageggg aagactgate tactgeatag acateatatt etggttetea eggeteetgg aettetttge tgtgaateaa eatgeaggte eatatgtgae eatgattgea aaaatgacag caaacatgtt ctatattgtg atcatcatgg ccatagtcct gctgagcttt ggagtggcac gcaaggccat cetttegeca aaagagccac catettggag tetagetega gatattgtat ttgagccata ctggatgata tacggagaag tctatgctgg agaaatagat gtttgttcaa geeageeate etgeeeteet ggttetttte ttacteeatt ettgeaaget gtctacctct tegtgeaata tatcatcatg gtgaacctgt tgattgettt ettcaacaac gtttacttag atatggaate eattteaaat aacetgtgga aatacaaceg etategetae

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MSOKSWIKGVFDKRECSTIIPSSKNPHRCTPVCOVCONLIRCYCGRLIGDHAGIDYS WTISAAKGKESEOWSVEKHTTKSPTDTFGTINFQDGEHTHHAKYIRTSYDTKLDHL **LHLMLKEWKMELPKLVISVHGGIQNFTMPSKFKEIFSQGLVKAAETTGAWIITEGI** NTVSKHVGDALKSHSSHSLRKIWTVGIPPWGVIENQRDLIGKDVVCLYQTLDNPLS KLTTLNSMHSHFILSDDGTVGKYGNEMKLRRNLEKYLSLQKIHCRSRQGVPVVGL VVEGGPNVILSVWETVKDKDPVVVCEGTGRAADLLAFTHKHLADEGMLRPOVKE EIICMIONTFNFSLKQSKHLFQILMECMVHRDCITIFDADSEEQQDLDLAILTALLK GTNLSASEOLNLAMAWDRVDIAKKHILIYEQHWKPDALEQAMSDALVMDRVDFV KLLIEYGVNLHRFLTIPRLEELYNTKQGPTNTLLHHLVQDVKQHTLLSGYRITLIDI GLVVEYLIGRAYRSNYTRKHFRALYNNLYRKYKHQRHSSGNRNESAESTLHSQFIR TAQPYKFKEKSIVLHKSRKKSKEQNVSDDPESTGFLYPYNDLLVWAVLMKRQKMA MFFWQHGEEATVKAVIACILYRAMAHEAKESHMVDDASEELKNYSKQFGQLALD LLEKAFKQNERMAMTLLTYELRNWSNSTCLKLAVSGGLRPFVSHTCTQMLLTDM WMGRLKMRKNSWLKIIISIILPPTILTLEFKSKAEMSHVPQSQDFQFMWYYSDQNA SSSKESASVKEYDLERGHDEKLDENOHFGLESGHOHLPWTRKVYEFYSAPIVKFW **FYTMAYLAFLMLFTYTVLVEMQPQPSVQEWLVSIYIFTNAIEVVREVSISEPGKFTQ** KVKVWISEYWNLTETVAIGLFSAGFVLRWGDPPFHTAGRLIYCIDIIFWFSRLLDFF AVNQHAGPYVTMIAKMTANMFYIVIIMAIVLLSFGVARKAILSPKEPPSWSLARDIV **FEPYWMIYGEVYAGEIDVCSSQPSCPPGSFLTPFLQAVYLFVQYIIMVNLLIAFFNNV** YLDMESISNNLWKYNRYRYIMTYHEKPWLPPPLILLSHVGLLLRRLCCHRAPHDQ **EEGDVGLKLYLSKEDLKKLHDFEEQCVEKYFHEKMEDVNCSCEERIRVTSERVTE** MYFQLKEMNEKVSFIKDSLLSLDSQVGHLQDLSALTVDTLKVLSAVDTLQEDEALL AKRKHSTCKKLPHSWSNVICAEVLGSMEIAGEKKYQYYSMPSSLLRSLAGGRHPP RVORGALLEITNSKREATNVRNDQERQETQSSIVVSGVSPNRQAHSKYGQFLLVPS NLKRVPFSAETVLPLSRPSVPDVLATEQDIQTEVLVHLTGQTPVVSDWASVDEPKE KHEPIAHLLDGODKAEQVLPTLSCTPEPMTMSSPLSQAKIMQTGGGYVNWAFSEG DETGVFSIKKKWQTCLPSTCDSDSSRSEQHQKQAQDSSLSDNSTRSAQSSECSEVGP WLOPNTSFWINPLRRYRPFARSHSFRFHKEEKLMKICKIKNLSGSSEIGQGAWVKA KMLTKDRRLSKKKKNTQGLQVPIITVNACSQSDQLNPEPGENSISEEEYSKNWFTV SKFSHTGVEPYIHOKMKTKEIGQCAIQISDYLKQSQEDLSKNSLWNSRSTNLNRNSL LKSSIGVDKISASLKSPQEPHHHYSAIERNNLMRLSQTIPFTPVQLFAGEEITVYRLE ESSPLNLDKSMSSWSORGRAAMIOVLSREEMDGGLRKAMRVVSTWSEDDILKPGQ VFIVKSFLPEVVRTWHKIFQESTVLHLCLREIQQQRAAQKLIYTFNQVKPQTIPYTP RFLEVFLIYCHSANQWLTIEKYMTGEFRKYNNNNGDEITPTNTLEELMLAFSHWTY EYTRGELLVLDLOGVGENLTDPSVIKPEVKQSRGMVFGPANLGEDAIRNFIAKHHC NSCCRKLKLPDLKRNDYSPERINSTFGLEIKIESAEEPPARETGRNSPEDDMQL

GGGAGAGTCCCAGGTGGGGGCACCGGAGGTCTGGTGCCCTCAGCCACTCTGACACCCCACTGTGGAAGTGGCTGGGGCTTAGTCCCCGGACATCGA GGGGCCGTGTAGCACCCCCGACTTCTCAGCACGGGAGCACAGCCTTCCTGCCCTCTGAGGATCAGGTCCTGATGAGTTCTGCCCCAACACTGCACCT GGGCTGGGGACCCCCACTCAGAGTCACCCACCAGGAAACCATGGCCACCAGTGAGGGGGCCTGCGCCCAGGTACCAGATGTGGAGGGGCGGACC GGCGCATCCTGGAGCGTGTGGAACAACCACCTGGTGCAGAGTGCACAGACCCTGCTGAGCCCCTGTACCTCCCGCCGCCTCACCGGCCTCCTG GACCGTGAGGTGCAGGCCGCCCAGGCCCTTGCTGCTGCCCGAGGCTCCTGGGGTCCCAGCTCCCAGCTCCTCACTGTCCTGCCATTGTGGTAGA GGGTGCCTGGCCCACCACCACACTCCTTGACCCCCAGCCGACTAGGCCTTTCAACAGAAAGAGATTTGCCCCTCCAAAGCCCAAAGGAG AGACAACCACGGCTCCTACCATGTCGGCCAGCAGCTCTGATGTAGCCTCCATTGGGGTTAGCACTTCCGGAAGTCAAGGTATCATTGAACCCATGG ACAGGAGTGCACAGAAGGGCATGATGACACAGGGGAAGGGÇAGACACACCTAGAAACAACACAGGCAGGTGAGAAGATACAGGAAGACAGGAAGGC TGTATGGATCAGGGTGGCTGTCCTCTAGCTGGCCTGAGCCAGGGTACCCACGATGCCTTCTTCTTGGAACTGGGCTGACAGCTAGCCCAAAGGC ACCAGGGGAGATGGAACACACAGACAGCCCAGAGGACACGTGCAGATAGGAAGACGCAGGTGGATGCTGGGACACAAGAAAGCAAGAGGCCACAGTCAG CCAGGCAGATAAGGGCACACAGGAAGAAGGATGCAGGGAGAGGGGATGCAGGGGAGAGGGGACGCAGTCAGAGGGGAGCGCCCCAC AGCCATGGAAGGTCAGTCTGAGCAAGGTGGCAACCAGCCTCGGCCCACCATCCAGAACCCCCAAACTCCCACCTACAGCGGGTCCTAGAGCTCCTC GGAACCATGAGCAAACTGTGCTGGGTCCCCTGTCAGGGAACCTCATGCTCCCAGCAGCCGCCCCATGAGGGGAGTGTGGAGCAGGTGGGAGGAGA GTGCCGACGCCCCTGCCCGGCGAGACATGGCACCCGGGGACAGCAGGGGCCAAGCAGGCCACAGGACTCCAGGAGGTCCTGGAATGCC GGAAGCCAGAGTTAGAGAAGGCAGCCCAAAGCCGCCGTTCTTCAGAAAACTGCATCCCCAGCTCAGACGACGTGACTCCTGTGGGACTCAGGGGCCCC TGGGCACTCCAGACAAGGCCCAGAGCCCCTGGCCCAGGCCCAGGCCAGGAAGTGTATTTCTCCTTGAAGGACATGTACCTGGAGAACACCCAGGCA GTCAGGCCTCTTGGGGAAGAGGGACCCCAGACCCTGAGTGTCCGGGCGCCTGGGGAGGTCCCAAGGGGAAGGCACCCCTCAGGGCTAGAAGCGAGG AGCCAGCCGGAGCTACCTGCTCAGCGTGCGGCCCGAGACCAGCTTATCAAGCAACCGGTTGTCTCACCCCAGCTCTGGAAGGAGCACCTTCTGCTCCAT CATTGCTCAGCTCACAGAGGAGCCCAGCCGCTATTTGAGACCACGCTCAAGTCCCGGTCTGTGTCCGAGGACAGCGACGTCAGGTTCACCTGCATCGT GTCCTGGAGGTGGGCACCATGACTGAGTACAAGATCCACCAGCGCTGGTTCGCCAAGTTGAAGCGCAAGGCTGCGGCAAAGCTGCGCGAGATCGAGCA TGGGCCTGATCAACAGTTTTGCTTCTGGAGAAGTGACCACCAACGGGGAGGCTGCCCCCGAGAATGGAGAGGAGGAGGAGGAGGATGGCTTGCTGACATAC AGGCCACCACTGACAGCCCATTTCTTCTCTGAGTCAAGCTCCAGAATGCGGGGCCCAGAGCTTAGGAAAGGCCCCACCTCAGGCCTTGTGCAG GAGCTGGAAGCACGAGAAGGCGGTGCCTGGGGAGGTCGACACTCTGCGCAAGCTCAGCCCGACCGCTTCCAGCGAAAGCGGCGATTGAGCGGGGCT CACAGGATACCCAGAGCCAGAGGTGACCTGGTACAAGGATGATACGGAGCTGGACCGCTACTGTGGCTTGCCAAAATATGAGATCACTCATCAGGGCA ACCGCCACACACTGCAGCTGTACAGGTGTCGAGAAGATGCCGCCATCTACCAGGCCTCTGCCCAGAACAGCAAGGGCATTGTGTCCTGCTCAGGG CTGCAGACACCAGGGCCGCCAAGGGAGCGGACTCGGAGCCGGCCCTGGGGCGGGGCACATGGGCCCCGGCGCCCCGGCGTCTCCAAGCCGCGCTGC TGGGGGTGTTGGGGGAGAGAGAGAGATCCCACGGGGTTCCGGCCTCCCAGGGACTCAGGTCACTAATGGAGGTGGCTTGTCTATGTGCTG GGCCAACAGCCACTGGCGAGGCGAGGGTCAGTCACGGCTGGTGCCAGGAAGAGGGCTGGTTCTTTGGCTCCCTGGTCTCCGGGGTCTAGCCC GGTCCCGGGAGCTCCACGAAGGGGCCTGTCCTCCATGACCAGGACACCCGCTGCGCCTTCCTCCCGAGGCCTCCCGGGGCCTCTCCAGACGCGGGCCTA GTATCAGGACTCAGCCCATTTCCCCCTCTGGTGCTGAGAAATGGAGGCCGAAGGAGTGATCTAGAAGTGTTAATTGAGCCCCTAATCTATGCTAGTTAC 

#### Figure 10A

AAAGGAAGCCACCCAGGAAGGAAGCACAGAGCTGGGGGCTCTGGAAACGCCCTGTGTCTCTGGCTACAGCAAGACCAGGCCCAGGAGCCCACCAGCACCACCAGCACCA TGCCTCTCAGCTACTTGCTGACCATTTCCTGCTTCTCAAGCTGCAGAGAAGCTTTTCATTCCCACCCCCACCGGGAACCTCCCCTTGCCTAACATTTCCC TCCATGCACTTGGGTGGAGGGGAGTCTCTGTGCCTGGGAATTAGGACCCCTGCTCCAACCATCGCTCTTGATCCTGGGGCCCCAGCTCTGGGTCCTCAT GGGCATTCTGTAGTCCCAGGCCCACTGGAAAAATGAATCTATATTTTGGTTCCTGGACCGAAGTTCAGTCGCAGCCTTCTGTGGCCACAGAAAAGACAGC CTCTATGGTAACATCTCTGACTTCTCTACCTCCTGTGCTCAGGTGACTCCACATCTTCTGCCCCAGTGTGTCCCCACCTCTCCCAGCCTGTATACCCA GCAGATGTTACAATCTGAGTGAGGACATGCAGGCCAACTTTTACCCTCCTGCATTTGCCTGGCCCTGATCTCGCCTGTCCTCAGGGATCCAGACTTCCTC CCCACTCCCTGCCCACCAATACCCAGGTGAGGAACAGACCCTCTGGCCTCTCACCCCACTTCAGTGCTCTTTCCCCAACTTCTCGGGGCTCTTTGCTC GICACAGTGAATTTCACATCCCCTCTCAACCAGGAGTGGAĠGGCTAGGTCCCTTCCCCATGGGGAGTACACTTGGGTGTTCTAGGAGGGATGCAGTCTA ATGAGGTGAGAGCTGGTGTGTGTCTCAGCAGCTGTAGCCAGAGAGGTGTTGACTCTGAGAGACCTTGCACTCCATACTGAAAGGAGGTGGG TCCAAATATGGAACTAACTGGAGAAGGTGCACGAAGGAGACACCACTTGGGGACCTCTGAGCAGGCTCTCGTGAATCAGCTCGTCATCAGATGGCTT TGTGCATGGCACATAGCCCACTGGCCTCTTCTGGTGCCACTGTCACCCAGGGCTCCCGGGCCTCAAGCAGTCCCCACCTCCGAGTGCCTGGCAACCTA TGCTGGTCTGGCCTGGTGACTCTCTTCTTCCTTCCAGCTACTTTCGCTCACTGATCTCAGCTTATCCTGCAACTAACCATCCTTGAGCCCAGA AGCTTCCTTGTCACAGACTTGGCAGGGGTTGACTGGAGATGACTGATGTGCAGATTGCTACCAAACTCCGAGGATACCAGGGCCTCAAGGAAAGCTGC CCCCCAAGCCAAAGCCTCTAAGAGTCCATCTGCTGGCAGGAAAGGCTCCCAGCTGAGTCCTCAGCCCCAGAAGAAAGGCCTCCCTAGTCCTCA GGCCCTCCTTGAAGTTTACACTTTGCCACTGCTGGAGGCTCCCCTGAGTCCTCTGCATGAGTTCTGCACCCCAAGCCCTTGCCCCAGCCCAGTCCAGCC TTTGGGCGACTGGTAAGCGAGGGGGGGGGGGGGGGTGTGGGTGTGGCCTTCGGAAGGCCTCCCAGGCCAAGGTCATCTACGGGCTGGAACCCAT CTICGAGTCGGGCCGCACGTGCATCATCAAGGTGTCCAGCCTGCTTGTGTTTGGGCCCAGCAGTGAGACTTCTCTTGTGGGCCAGAAACTACGACGTCAC CATCCAGGGGTGCAAGATCCAGAACATGAGTCGGGAGTACTGCAAAATCTTCGCAGCAGAGCCCGGGCCGCGCGTGCTTTGGGGAGGTGCCTGAGA TTCCCTGCCTGCTGGACCGGTTCGCCTCCTCCCACTGCATGCCTACTGTGAGCTGCTGGGGGCTGACACCTCTCAAGGGCCCGGAGGCGCCCA CCCCCGTAGACTGCGGTGTGTATCGGTGCACCATCCACAATGAGCACGGCTCGGCCTCCACCGACTTCTGCCTCAGCCTGAGGTGTTGTCAGGATTCA CTCCAGGGCGGGAGAGACGCTCCCCTACGCAGGCAGAAAGGCGAGCATGCTGGAGGTGCCTCGGGCAGAGGAGGAGCTGGCGGCAGGAGACCTGGG AAAGCCCCACAGGTGATCCGGAAGATTCGGGTGGAGCAGTTTCCTGATGCCTCCGGTAGCCTGAAGCTGTGGTGCCAGTTTTTCAACATTCTTAGTGAC TCATCCCACTGTATCTGATCTACCGGCCTGCAAACAATATCCCATATGCTACCCTGGAGGAAGACCTGGGCAAGCCCCTGGAGTCTTACTGTTCTCGGG AATGGGGCTGTGCTGAGGCTCCGACACCTCTGGCCATGCAGAAATGCCAGACCTTCCAACATGGTTGTATCAGTGGACAAATGGC AGTTCCCAGGGGAGGCTCTGACAGGCTCCCGGCAGCTACACCTGAGGAACTGGCTCTAGGGGCCCGGAGGAAGATTTCTCCCTAAGGTCAGAGCA AGCATGGCTGGTCGACTGGGGGGGGCGGCAGGCCCCTGGACAGGGGCCCTCAGCAGAGAGCATAGCCCAGGAGCCTCCCAAGAGGAGA GCAGGAGACGGGGAGCCACCTGAAGAAAGGGAGAGCCCCACGGTTTCCCCCCGGGGGCCCAGGAAAAGCCTGGTGCCTGGGTCCCCAGGGA CCCCAGCCCCAAGGCCGGCGGTCTGGACACAGAGGTGGCCTGGATGAAGGCAAGCAGGAGACACTGGCCAAGCCCAGGAAAGCCAAAGACCTGCTG CGAGGAGGACCCTGGGCTCAGAAGGAGCCAGTGAGGGTGAAGGAGGTTTCCCTTGAGGGGCCTGGCCTCCTGGGGGCCTCTCAGGAGAGC GATTACTTTGGTGAACTGAAAAA

Figure 10A

PEHPLYLIYRPANNIPYATLEEDLGKPLESYCSREWGCAEAPTASGSSEAMQKCQTFQHWLYQWTNGSFLVTDLAGV ESPTVSPRGPRKŠĽVPGSPGTPGRERRSPTQGRKASMLEVPRAEEELAAGDLGPSPKAGGLDTEVALDEGKQETLAKP GLRKASQAKVIYGLEPIFESGRTCIIKVSSLLVFGPSSETSLVGRNYDVTIQGCKIQNMSREYCKIFAAEARAAPGFGEV DWKMTDVQIATKLRGYQGLKESCFPALLDRFASSHQCNAYCELLGLTPLKGPEAAHPQAKAKGSKSPSAGRKGSQL DPGLIDSLKNYLLLLĽKLSSTETSGAGGĒSQVGAATGGLVPSATLTPTVEVAGLSPRTSRRILEŘVENNHLVQSAQTLL LSPCTSRRLTGLLDREVQAGRQALAAARGSWGPGPSSLTVPAIVVDEEDPGLASEGASEGEGEVSLEGPGLLGASQES SMAGRLGEAGGQAAPGQGPSAESIAQEPSQEEKFPGEALTGLPAATPEELALGARRKRFLPKVRAAGDGEATTPEER GVYRCTIHNEHGSASTDFCLSPEVLSGFISREEGEVGEEIEMTPMVFAKGLADSGCWGDKLFGRLVSEELRGGGYGC EATTDSKPISSLSQAPECGAQSLGKAPPQASVQVPTPPARRRHGTRDSTLQGQAGHRTPGEVLECQTTTAPTMSASSSS MEGQSEŌEVATSLGPPSRTPKLPPTAĞPRAPLNIECFVQTPEGSCFPKKPĞCLPRSEEAVVTASRNHEQTVLGPLSGNL RKAKDLLKAPQVIRKIRVEQFPDASGSLKLWCQFFNILSDSVLTWAKDQRPVGEVGRSAGDEGPAALAIVQĀSPVDC QHSGLGLINSFASGEVÍTNGEAAPENGEDGEHGLLTYICDAMELGPQRAĽKEESGAKKKKKDEESKQGLRKPELEKA AQSRRSSENCIPSSDEPDSCGTQGPVGVEQVQTQPRGRAARGPGSSGTDSTRKPASAVGTPDKAQKAPGPGQEVYF QESKRPQSDRSAQKGMMTQGRAETQLETTQAGEKIQEDRKAQADKGTQEDRRMQGEKGMQGEKGTQSEGSAPTA MLPAQPPHEGSVEQVGGERCRGPQSSGPVEAKQEDSPFQCPKEERPGGVPCMDQGGCPLAGLSQEVPTMPSLPGTG LTASPKAGPCSTPTSQHGSTATFLPSEDQVLMSSAPTLHLGLGTPTQSHPPETMATSSEGACAQVPDVEGRTPGPRSC SLKDMYLENTQAVRPLGEEGPÕTLSVRAPGESPKGKAPLRARSEGVPGAPGQPTHSLTPQPTRPFNRKRFAPPKPKG DVASIGVSTSGSQĞIIEPMDMETQEDGRTSANQRTGSKKNVQADGKIQVDĞRTRGDGTQTAQRTRADRKTQVDAGT AKLKRKAAAKLREIEQSWKHEKAVPGEVDTLRKLSPDRFQRKRRLSGAQAPGPSVPTREPEGGTLAAWQEGETETA PGSSTKGPVLHDQDTRCAFLPRPPGPLQTRRYCRHQGRQGSGLGAGPGAGTWAPAPPGVSKPRCPGRARPGEGQQQ DDGPVWIPSPASRSYLLSVRPETSLSSNRLSHPSSGRSTFCSIIAQLTEETQPLFETTLKSRSVSEDSDVRFTCIVTGYPEP MEVAWLVYVLGQQPLARQGEGQSRLVPGRGLVLWLPGLPRSSPSWPAVDLAPLAPARPRGPLICHTGHEQAGREPG VTTARPPAINRGARQPRAGAAAAGRGPGAGAWRTGEAAASAGPAVGEGGAMGSRRAPTRGWGAGGRSGAGGDGE EVTWYKDDTELDRYCGLPKYEITHQGNRHTLQLYRCREEDAAIYQASAQNSKGIVSCSGVLEVGTMTEYKIHQRWF SPQPQKKGLPSPQGTRKSAPSSKATPQASEPVTTQLLGQPPTQEEGSKAQGMR

Figure 10B

GAATATGGCCTATGGCCATTTTCTTATGAGTTTTCTAATCATAGAGATGTTGTGGTCGATTTACAAGGTTGGGTAACCGGTAATGGAAAAGGAC ACAATAAAAGGGATGTATCAGTGTGGAGCCTTACATACTGGGAGAATTTGTAAAATTGTCAAATAACACGAAAGTGGTGAAAACAGAATACAAAGCCACA TTGGGTTTCATTGCCGGGAAAGATGAGGAACCTTGAGGCTCGCACCTTGCAACCTGATGACTTTGAAAAGCTGTTGGCAGGAGTGAGGCATGA TTGGCTGTTTCAGAGACTAGAGAATACGGGGGTTTTTAAGCCCAGTCAACTCCACGGAGCACATAGTGCTCTTTTGTTAAAATTTCAAAAAATCTGAA CGACAGCATGGATGTTCCCTGCACAAATGGGCACGGCTCTCATAGACTGTGCATTCTGAGACAGCCGCCTGGTCAGAGGGCGGAGACCCCCCAATTCCTC CAAGAAGAAATTCTGGGGAGGTATGTTGGGAAAGACTATAAGGAGCAGAGGGGCTCTGGCACCACTTCACTGATGTGGAGCGACAGATGACCGCACA AGAAAGCACTGAAGATGCACCCTTAGACTTTCACAGGGTCCTGCACATTCTCTGGGAAACATTTCCATGCTGCCATGTAGCTCCTTCACCCCTAATTGG AGGCAGGGGAAAGAGGAGAAAATTAGTGAAAGAGGCGCAGGCCCTACATTTAAAGCTAGTCCCTCCTGGGTTGACCCAGAAGGAGAAACAGC CTICTCAAAATCAGCCACAGCAACAGATGCCCTTGACACCCTTCTCGCCTCATAATACCCCAGGCATTTTCTTGGCCCCTGGTGCAGGGCTTCTAGAAGG GCTGGGAGGAAGTGAATTATCACGTTGACGACAGGTCAGCCAGAAAAGAGCCTGGCAAAGAACATCTGGTGGACACTCAGTGTTCCACTGCCTTGTCTG CCTGTTCAAAATCCTGACTCCAGAAAAAGTGGTGGCCCAGTCGCAGAGCAGGGCATCGACCCTGATGCCTCCACAGTGGATGAGGAGGGGCAACTGCT CAGCTCATCCTCAGTGGGTGGCTGAAATCACCTGCATTTTCCAGTGGTTCTTCTGAGGGGGGACAGCCCTTGGTCCTATCTGAATTCCAGTGGGAGTTC AGCTCCAGAAGGTATCCAGGAAGTCAGAAATATGGGACCCAGAAATACTTCTGCTCCACTCCAGACCCTCATATCGTTCTGGTTCTTGGTCTTCTGATTCT GGTAGGCCCAAGAATATGGGCACACATCCTTCAGTCCAAAAAGAAGCCTTTGAAATAATTGTTGAGTTTCCAGAAACCAACTGCGATGTCAAAAGAC AGGAGCTAGAGAATGACAGGGAAGGCAGAGCTATGCATTGCATTCACAGCTTCATGATCTCTCTTCAGGAACCCAACAATGACAATTTGGAGC ACAGATCTTATGTTCCCGAGAGTTTCGAGTTGGATAAACTTATCTTGCATGGGCAAGGGGATTTCCAAAAAATCCTTGACACTATTCACAGCA GAGGGAACTCAGAAGGGGAGGAAGTGGACCCATTCTGATGCATTTCGAGTCTCCTTGGATCAAGATGTGGAGACTGAGACTGAGCCATCGG GATAAAAAGGGCCTCTCCACGTCGCTAGGTATACTGGCAGACTTTGTTTCCATGAGCAAGAACGATTATGAAAAAGTTTAAAAAACAATCCACAAATTA CCATACTTCGGTGTGTGAAGTATTTGAAAGTGATTGTGGAAACAAAAATGAACAGAAAAGATGCAAAAACAGGAGTCTGCATCACTGCTCTTAAAAAC ACTACAGCAATGGTGAGGGAGCTGTTTTCAACAAGTCTCTGAGTGGCAGCCAGACTTCCAGTGCTTGGAGCAACTTATCAGGGTTTAGTTCCTCTGCAA CAGATCAGAGGGCAGATTCTGCAAAAGCTGGGTATGTGGTACGAAGCAGCAGAGTTAATATGGGCCTCCATTGTAGGATATTTGGCACTTCCTCAGCCG TCACAGCTGTGAATATCCGTGGTGTTTATTGTCCTACAGTAGTTCAAATGACTGTCCTCCAGAATTGAAAAACTTACATCTGTGTGAAGCCAAAGA GGCCTTTGAGATTGGCCTCCTCACAAGAGATGATGATGAGCCTGTTACTGGAAAACAGGAGCTTCACAGGCTTTGTCAAAGCTGCTTTCGGTCTCACCAC CCAGAAGTCAGGACAGAGAAGCTCTGAAGAAGTTATGTCTGTGATTGCCCAGGTGAAGGAACATTTACAAGTTCAAAAGCTTCTCAAATGTAGATG ATTTGAGCCTGCTGAGGAGTTTGACCACCATTTGCTGTCCGCTGCAGAGCCTGCAAGCTGGCAGCTGCCTTCAGTGCCTATACGCCGCTCTTCGTGC AGTGCACAGAAGGCTCCATGGGGACAGGGACGGTCCATGCAGCTCTGTAAGGAAGCAATGGGGAAGCTGTACAATTTCAGCACTTCCT AGAAATAAAAAACATAGATACTGTGAGTACTACTCCAAGAAAAGCCACATTGTCAAAGAGACACAGGAATATCTTCCTCCCTAATGGGTAAGAATGTTCA GAGTATATTCTGAGCAGTCTAATAAGCAACAATGGAGCAACGGGTACCTGGCTGTACAGAAATGAAAGTGACAAGGTCCTGGTGCAGTCGGTCTGTATA ATCCTCGCTCGGGACTGTGCGGCGGCGGCTATTGTGTTCTTGGTGGACCGGTTCCTGTATGGGCTCGACGTCTTGGAAAACTTCTGCAGGTCGCC GGCAGTACAAACAAGCCGTGGGCCCAGAGGACAAAACTGAAGGATGTGATTGGCGCCCGGGTTGCAGCTTACTGGCGTCCCTGAGGGCCTCC AAAGGTCTCCACAAGTTGCCACGCCACGCCAGTTGCCCCGCAGGTGGTTATTCGCCAAGCCCGAATCTCCGTGAACTTCAGGAAAACTTTTAAAAGCA GAGCGAGGACCAGCGCTGCAGAGCTTTACTCCCCAGCGAGTTAAGGACCCTGATCCAGGAGGCAAAGGAAATGAAGTGGCCCTTCGTGCCTGAAAAGT GTGGAATGTAATGAAATCTGCCATCGTCTTTTTTTTGACTAGACCTTCAATGGAGAAACCA

Figure 11A

LGEFVKLSNNTKVVKTEYKATEYGLAYGHFSYEFSNHRDVVVDLQGWVTGNGKGLIYLTDPQIHSV THPSVQKEEAFEIIVEFPETNCDVKDRQGKEQGEEISERGAGPTFKASPSWVDPEGETAESTEDAPLD FKPSQLHRAHSALLLKYSKKSELWTAQETIVYLGDYLTVKKKGRQRNAFWVHHLHQEEILGRYVG KDYKEQKGLWHHFTDVERQMTAQHYVTEFNKRLYEQNIPTQIFYIPSTILLILEDKTIKGCISVEPYI FHRVLHNSLGNISMLPCSSFTPNWPVQNPDSRKSGGPVAEQGIDPDASTVDEEGQLLDSMDVPCTNG CEVFESDCGNNKNEQKDAKTGVCITALKTEIKNIDTVSTTQEKPHCQRDTGISSSLMGKNVQRELRR QQMPLTPFSPHNTPGIFLAPGAGLLEGAPEGIQEVRNMGPRNTSAHSRPSYRSASWSSDSGRPKNMG GGRRNWTHSDAFRVSLDQDVETETEPSDYSNGEGAVFNKSLSGSQTSSAWSNLSGFSSSASWEEVNY HVDDRSARKEPGKEHLVDTQCSTALSEELENDREGRAMHSLHSQLHDLSLQEPNNDNLEPSQNQPQ AFSSGSSEGDSPWSYLNSSGSSWVSLPGKMRKEILEARTLQPDDFEKLLAGVRHDWLFQRLENTGV DREALSQEVMSVIAQVKEHLQVQSFSNVDDRSYVPESFECRLDKLILHGQGDFQKILDTYSQHHTSV HGSHRLCILRQPPGQRAETPNSSVSGNILFPVLSEDCTTTEEGNQPGNMLNCSQNSSSSSVWWLKSP WQYKQAVGPEDKTNLKDVIGAGLQQLLASLRASILARDCAAAAAIVFLVDRFLYGLDVSGKLLQVA RGQILQKLGMWYEAAELIWASIVGYLALPQPDKKGLSTSLGILADIFVSMSKNDYEKFKNNPQINLS LLKEFDHHLLSAAEACKLAAAFSAYTPLFVLTAVNIRGTCLLSYSSSNDCPPELKNLHLCEAKEAFEI GLLTKRDDEPVTGKQELHSFVKAAFGLTTVHRRLHGETGTVHAASQLCKEAMGKLYNFSTSSRSQ KGLHKLQPATPIAPQVVIRQARISVNSGKLLKAEYILSSLISNNGATGTWLYRNESDKVLVQSVCIQI MNNQKVVAVLLQECKQVLDQLLLEAPDVSEEDKSEDQRCRALLPSELRTLIQEAKEMKWPFVPEK DQKVFTTNFGKRGIFYFFNNQHVECNEICHRLSLTRPSMEKP

Figure 11B

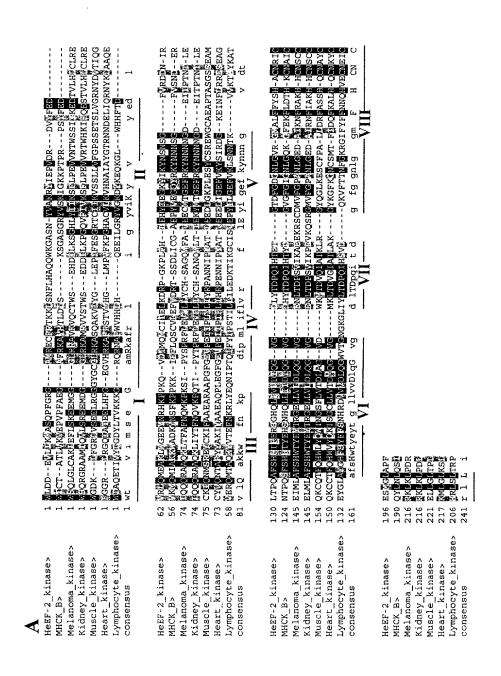


Figure 12

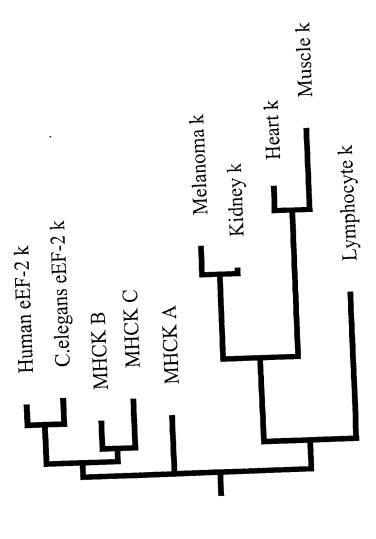
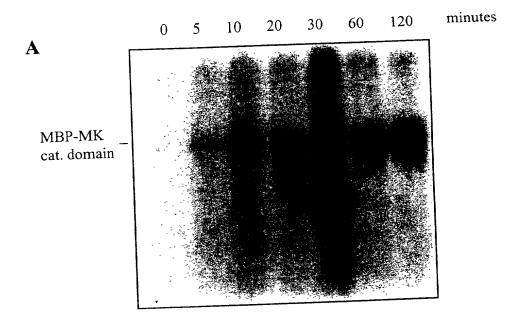


Fig. 1

Figure 13



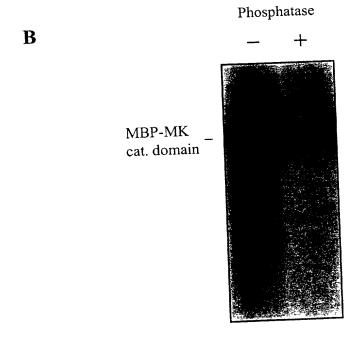


Figure 14

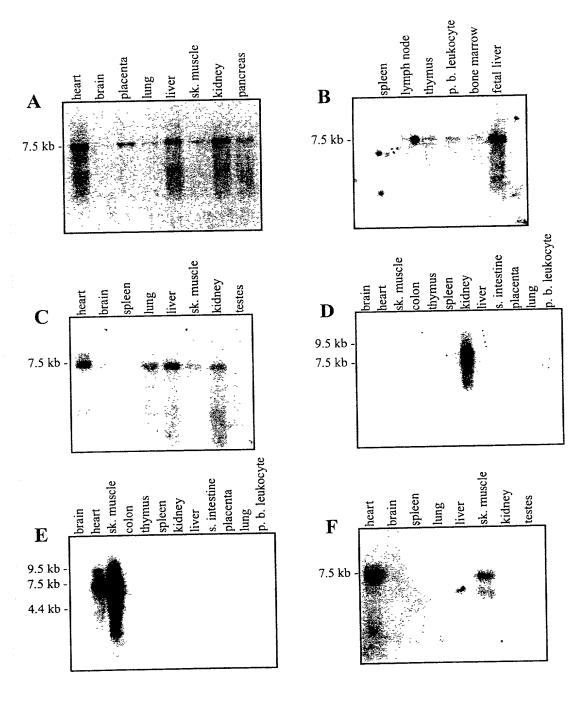


Figure 15

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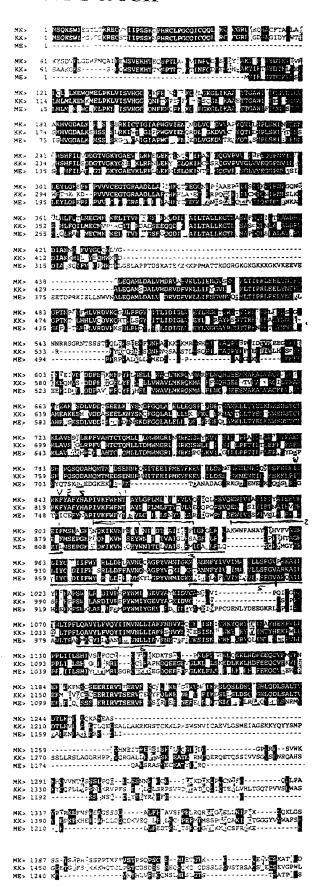


Figure 16

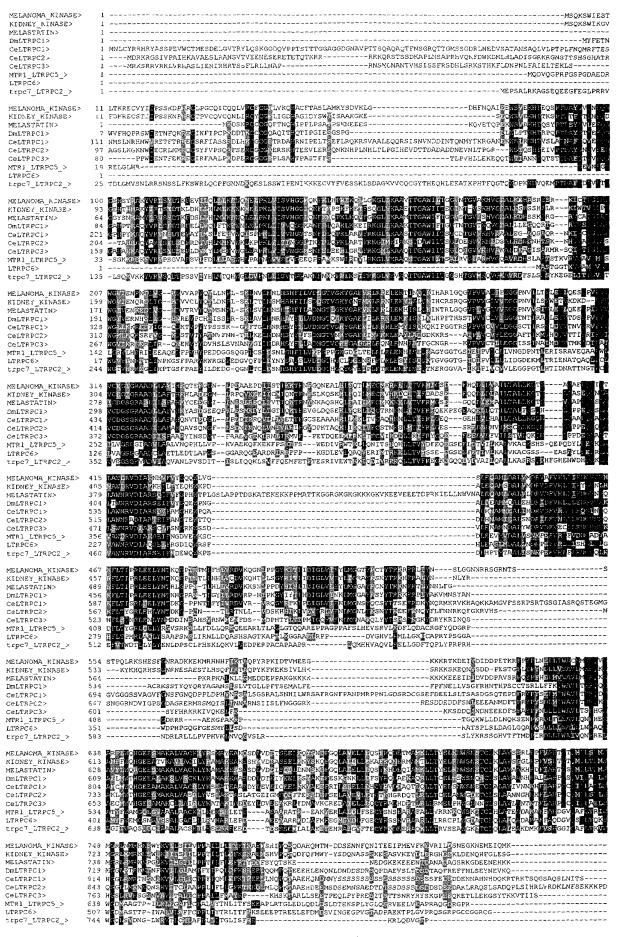


Figure 17A

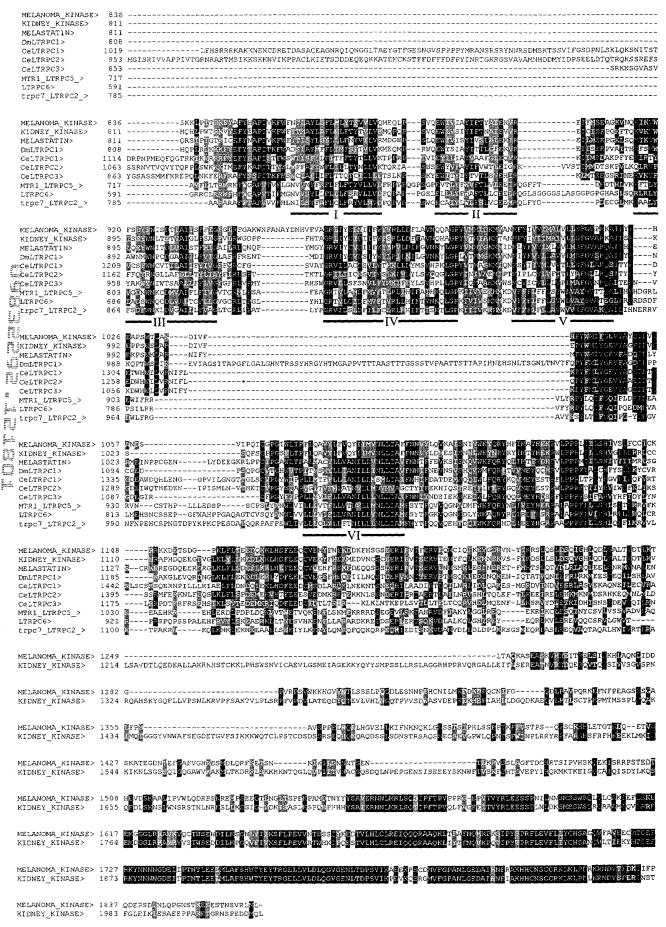


Figure 17B

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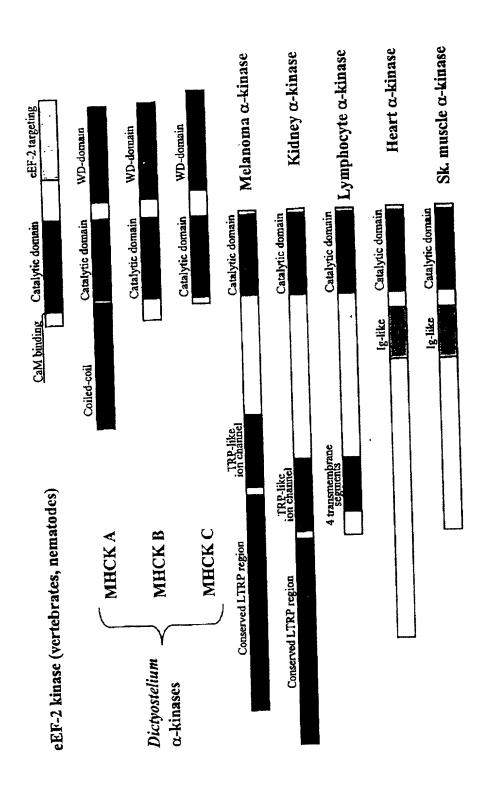


Figure 18

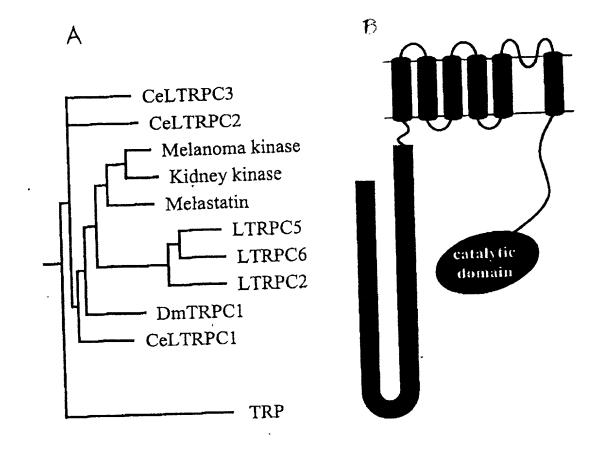


Figure 19